Exchange of Data in a Full, Open, and Timely Manner
Remarks Prepared for Delivery
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Earth Observation Summit
July 31, 2003
Washington, D.C.

Good afternoon ladies and gentlemen. I welcome this opportunity to meet with the representatives of many countries as we discuss the critical issue of scientific data exchange. It is an important element of improving our collective Earth observation capability.

The father of modern science, Galileo, once said, "I render infinite thanks to God for being so kind as to make me alone the first observer of marvels kept hidden in obscurity for all previous centuries."

We continue to search for hidden marvels in our world, but unlike in Galileo's century, there are very few lone observers. As we circle the heavens, explore the ocean depths, and better understand the land, it is crucial to share our knowledge with all the inhabitants of our world.

I am here today as a strong advocate for full, open and timely exchange of the data that will come from the comprehensive, coordinated, and sustained Earth observation system whose foundation we are laying today.

I speak to you as a U.S. Cabinet Secretary who is responsible for making management and natural resource decisions that affect a large portion of the United States. My Department of the Interior manages more than 500 million acres—20 percent of the land area of the U.S., including parks, historical sites, wildlife refuges and multiple use public lands.

The Department's U.S. Geological Survey maintains an extensive scientific system overseeing land satellite data, stream gauge networks, earthquake monitoring and geospatial infrastructure for purposes of science.

We produce border-to-border data that we make available to regional and local collaborators and all interested parties.

We strongly support better access to and sharing of remotely sensed and other science data. An improved Earth observation system is needed and will be critical for gathering knowledge of the land and its resources.

The free and open sharing of scientific data is a necessity for ensuring success in many arenas. We want to work together toward achievable goals through agricultural technologies and practices, including biotechnology.

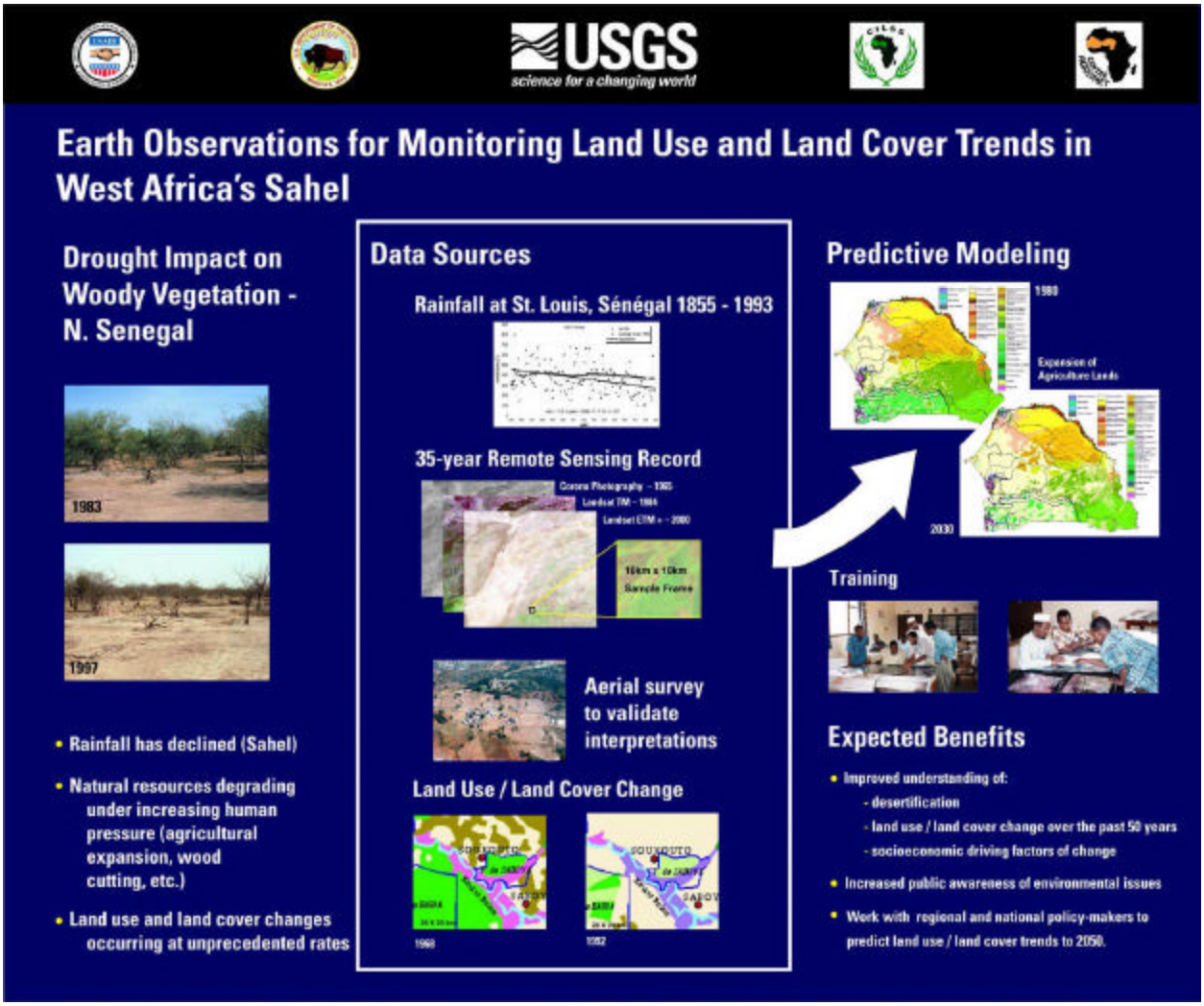
We share the goals of preventing famine and disease, enhancing nutrition, conserving water and natural resources and improving human health and biodiversity.

We recognize the need to support the exchange of observations recorded from actual field sites and from aircraft and satellite networks in a full and open manner with minimum time delay and minimum cost.

Since 1879, the U.S. Geological Survey has collected data about the Earth and its processes. For more than 30 years, the Landsat system, now managed by our Geological Survey, has been the only source for an extended record of moderate-resolution space-based observations of the landmass of our planet.

It has been a major responsibility of the Geological Survey to make those data available to users worldwide without restriction and at the cost of filling customer orders.

There is a program within the Geological Survey that illustrates the value of shared information on a global scale, and puts into practice the principles offered in the Earth Observation Summit declaration (Figure 1).



The Sahel region of West Africa has a highly diverse, yet fragile environment. It is a transition zone between the hyper-arid Sahara to the north and the more humid savannas and woodlands to the south. For decades the desert has been encroaching on formerly productive farming areas in a nine-country band across Africa. There has been a declining rainfall level over the last 35 years—something we deal with also in our American West.

The nine countries have experienced major population growth and a rapid expansion of agriculture into new regions in order to feed the population in an area with limited soil, water and vegetation resources. Forest and woodland areas are declining by an estimated 1 % per year, while population grows at almost 3 % per year and now stands at more than 52 million people.

This is an immense area, nearly the size of the United States. While the people and governments of the region are very aware of the issues, their ability to monitor and quantify the trends of recent decades has been limited.

An international partnership was formed to provide the science needed to evaluate solutions. Members of that partnership include the nine Sahel countries, the United States Agency for International Development, the United Nations Environment Programme, the World Bank, the Departments of Commerce and the Interior, the National Aeronautics and Space Administration, and the Institut du Sahel.

Some 30 years of imagery from U.S. satellites have allowed the partners to compare and contrast trends in land cover change. Meteorological data, soils information, stream gauge monitoring and observations in the field have helped us understand the socioeconomic and biophysical factors driving the trends.

The public domain principle of open access to U.S. data holdings helps make the analysis a success.

Our experienced scientists have evaluated the data, trained local scientists in the region in data analysis, and worked by their side to develop land use practices that deal with the issue. The solutions are many and varied. They include recommendations to change crop procedures, develop crops that better support life in the area, change irrigation practices, and in some cases, try to relocate people to better farming areas.

We believe the Sahel partnership is illustrative of the necessity for sharing data for effective decision making, from regional to national to local scales.

What are the key elements of a full and open data sharing policy?

As in the Sahel, users must have full access to the widest range of information from many sources: satellite and aerial remote sensing, and the vast networks of ground-based measurements and observations made by scientists and land managers.

National and international standards should be used to the greatest extent possible for archiving, processing, communicating and distributing data.

The information must be global in coverage and available to users worldwide. Countries with advanced observing and data collection systems and networks should be prepared to provide technical assistance to countries that seek those capabilities.

The entire U.S. government subscribes to the "public domain" policy. We recommend that this be the hallmark of archives of Earth observation system data. Those who study environmental issues must not be constrained by political, cultural or economic boundaries.

Timely use of the data can mitigate catastrophe. Desperate situations can call for extreme efforts for cooperation and quick response.

For example, in the U.S. our Advanced National Seismic System allows us to post a map on the internet within a few minutes of an earthquake. Emergency response teams don't waste time looking for the areas most seriously affected—we pinpoint where they need to be.

The U.S. Landsat program relies on the cooperation of 15 international ground stations to support a long-term global data acquisition program. Over time and through cooperation and regular communication, those stations, the Geological Survey and NASA have developed an efficient data acquisition and sharing network.

It came about because the Landsat data were provided in consistent formats, users were familiar with the data, and representatives from many countries saw the value of cooperation. Effective partnerships, like the Sahel, require hard work, flexibility, and substantial resources, but the result is worth the effort.

We face many serious challenges in our world. In closing, let me again endorse the concept and the practice of full and open sharing of Earth observation data as an important means to address those challenges.

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Figure 1. Use of Earth observations for monitoring land use and land cover trends in West Africa's Sahel region.